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Section H. - Tiverpon, IS96.]

Ihe North-Western I'ribes of Canculu.- Wileventh Report of the Committee, consistiug of Professor E. B. 'T'yoor (Uhairman), Mr. Cothberit E. Peek (Secretary), Dr. (r. M. Dawson, Mr. R. G. Halburton, and Mr. Horatio Hale, "pprinted to imeestigate the Plysical Characters, Lanquayps, and, Imelustrierl and Social Conditions of the North-Western I'ribes of the D.minion of Canada.

Tue Committee were originally nppointed at the Montreal Meeting of the Association in 1884, and, as indicated in the Tenth Report, presented last year at the Ipswich Meeting, it had been determined that that Report should conclude the series. When, however, it was clecided to hold the meeting for 1897 in 'Toronto, it appeared to be appropriate that the work of the Committee begun at the first Camadian Meeting should be concluded at the second, and the Committee were accordingly continued. The concluding Report of the Committee to be prepared for the Coronto Meeting may afford the occasion of pointing out to the Govermment and public of Canada the necessity for further and systematic investigation of the ethnology of the country.

The Report presented herewith contains a number of observations by Dr. Franz Boas, through whose agency the greater part of the work has been done, chiefly supplementary to irticles contained in the Fifth and Tenth Reports. Although the result of previous journeys by Dr. Boas, these have not been heretofore published.

It is now hoped to include in the final Report of 1897 the results of further field work in contemplation and to be directed toward the filling of some gaps still existing in our general knowledge of the tribes of British Columbia, particularly in respect to the anthropometric observations, which, in Dr. Boas' hands, have already yielded results of so much interest.

## Sixth Report on the Indians of British Culumbia. By Franz Boas.

The following pages contain notes that were collected by me on prerious journeys to the North Pacific coast. They supplement mainly the data on the Kwakiutl Indians, given in the Fifth Report of the Committee, and those on the Nass River Indians in the Tenth Report of the Committee.

There still remain two important gaps in our general knowledge of the ethnology of the North Pacitic coast. In order to fill these, further anthropometric investigations on the Haida and Hēiltsuk' and ethnological and linguistic researches among the Hē'iltsuk• would be required. When these have been added to the dati gathered heretofore, it will be possible to give a fairly satisfactory general outline of the anthropology of British Columbia.

## I. Notes on the Kwakiutl.

The Kwakiutl tribes speaking the Kwakiutl dialect eall themselves by the general name of Kwaikimakyeucak'. The following notes refer to this group, more particularly to the tribes living at Fort Rupert.

## THE SIIAMANS.

The shamans are initiated by animals, supernatural beings, or by inanimate objects. The killer whale, the wolf, frog, and black bear are the most potent animuls which have the power of initiating shamans. 'The eannibal spirit Baqbakuilanuqsi' wae (see Fifth Report, p. 54), the warrior's spinit Winā'lagyilîs, the fabulous sea bear Na'nîs, the sea monster Me'koatism or K•elk'ri'yuguit, the ghosts, the hemlock-tree, and the quartz may also initiate them. Shamans who were initiated by the killer whale or by the wolf are considered the most powerful ones. Only imnoeent youths can become shamans.

A person who is about to become a shaman will declare that he feels ill. For four days or longer he fasts in his house. Then he dreans that the animal or spirit that is going to initiate him appeared to him and promised to cure him. If he has dreamt that the killer whale appeared to him, he asks his friends to take him to a sinall island ; in all other cases he asks to be taken to a lonely place in the woods. His friends dress him in entirely new clothing, and take him away. They huild a small hut of hemlock branches, and leave him to himself. After four dars all the shamans go to look after him. When he sees them approaching, he begins to sing his new songs and tells them that the killer whale-or whatever being his protector may be-has cured him and made him a shaman by putting quartz into his body. The old shamans place him on a mat, and wrap him up like a corpse, while he continues to sing his songs. They place him in their canoe, and paddle home. The father of the young person is awaiting them on the beach, and asks if his child is alive. They reply in the affirmative, and then he goes to clean his house. He must even clean the chinks of the walls, and he must take particular care that no trace of the catamenial flux of a woman is left in any part of the house. Then he calls the whole tribe. The singers arrange themselves in the rear of the house, while the others sit around the sides. For a few minutes the singers beat the boards which are laid down in front of them, and end with a long call : yoo. This is repeated three times. Then the new shaman begins to sing in the canoe, and after a short time he appears in the house, dressed in head-ring and neck-ring of hemlock branches, his eyes closed, and he dances, singing his song. Four times he dances around the fire. During this time the singing master must learn his song. After the dance the new shaman leaves the house again and disappears in the woods. In the evening the people begin to beat the boards and to sing the new song of the shaman which they had learned from him in the morning. Then he reappears and dances again with closed eyes. This is repeated for three nights. On the fourth night when the people begin to sing for him he appears with open eyes. He wears a ring of red cedar bark, to which a representation of the animal that initiated him is attached. He carries a rattle on which the same animal is carved. He looks around, and says to one of the people : "Tou are sick.' It is believed that the shaman can look right through man and see the disease that is in him. Then he makes his first cure.

The power of shamanism may also be obtained by purchase The intending purchaser invites the shaman from whom he is going to buy the power and the rest of the tribe to his house. There the people sing and the shaman dances. During his dance he throws his power into the purchaser, who falls down like one dead, and when he recovers is
l beings, or by black bear are iating shamans. port, 1. 54), the , the sea monster a, and the quartz the killer whale

Only inuocent
re that he feels he dreams that ared to him and whale appeared nd ; in all other ds. His friends They huild a After four days nem approaching, killer whale-or ind made him a ans place him on to sing his songs. ne father of the his child is alive. his house. He ze particular care 1 any part of the range themselves sides. For a few in front of them, imes. Then the $t$ time he appears ock branches, his he dances around his song. After isappears in the ds and to sing the n in the morning. This is repreated begin to sing for d cedar bark, to is attached. He He looks nround, believed that the se that is in him.
purchase The is going to buy the people sing his power into $n$ he recovers is
taken by the shaman into the woods, where both stay for four days. Then he returns, and the same ceremonial is performed that has been described before.

When the shaman has singled out a person whom he declares to be sick, he proceeds with the following performance: He carries a small bmidle of bird's down hidden under his upper lip. He lets the sick person lie down, and feels his body until he finds the sent of the disease. Thell he begins to suck at the part where the sickness is supposed to be seated, while the people beat the boards and sing his song. Three times he endenvours to suck out the disense, but in vain. The fourth time, after having sucked, he puts his hands before his face and bites the inside of his cheek so that blood flows and gathers in the down that he is carrying in his mouth. Then he takes it unnoticed from his mouth, and hides it in his hands. Now he begins to suck again, holding his hands close to that part of the body where the disease is supposed to be seated. Then he removes them, blows on them, and on opening his hasds the bloody ball of down is seen adhering to the palm of the shaman. After a short while he closes his hands again, applies them once more, and shows one or four pieces of quartz, which he is supposed to have removed from the borly of the sick person. Then he closes his hands again, and upon a renewed application produces the feathers, which he dechares to be the soul of the patient. He turus his hands palm downward, so that the ball adheres to his hand. If it becomes detached and falls down, it signifies that the patient will die an early death. If the ball adheres, he will recover.

For four months the shaman continues to make cures similar to the one described here. Every fourth day he must bathe. After this time people whom he treats are expected to pay him for his services.

It is forbidden to pass behind the back of a shaman while he is eating, because it is believed chat he would then eat the soul of the person passing hin in this manner. The person as well as the shaman would fall in a swoon. Blood flows from the shaman's mouth, because the soul is too large for him and is tearing him. Then the clan of the person whose soul he has swallowed must assemble and sing the song of the shaman. The latter begins to move, and vomits blood, which he tries to hold in his hands. After a short time he opens his palms, and shovs a small bloody ball, the soul which he had swallowed. Then he rises; while the person whose soul he had swallowed is placed on a mat in the rear of the house. The shaman goes around the fire, and finally throws the soul at its owner. Then he steps up to him, blows upon his head, and the person recovers. It is said that the shaman in this case also bites his check and hides some bird's down in his mouth, which soaks up the blood and is made to represent the soul. The person whose soul was swallowed must pay four or five blankets for the harm he has done to the shaman, and for his own cure.

The protector of a shaman informs him if an epidemic should be about to visit the tribe. Then he warns the people, and in order to arert the danger lets them go through the following ceremony. He resorts to a lonely place in the woods for one day. In the evening the people assemble in his house and beat the boards three times. When they begin to beat the boards the fourth time, he enters, wearing a large ring of hemlock branches. It is believed that the souls of unbora children and also those of deceased members of the tribe ure hanging
on the branches of the ring, ten to ench branch. He talks to them, and brushes them off from the ring. When he enters another shaman goes to meet him, and strews bird's down on to the ring and on the shaman's head. Then the latter walks around the fire, and stays in the rear of the house. Now every member of the tribe must go to him, and he 'puts them through the ring.' The person who is thus cleansed must extend his right hand first, and put it through the ring, which is then passed over his head, and down along the lody, which is wif ed with the ring. When the ring has almost reached the feet of the persons, the latter must turn to the left, and step out of it with his right foot first, turn on that foot, take out the left foot and turn once more to the left, standing on the left foot. Every member of the tribe is made to pass through the ring. It is believed that this is a means of preventing the outhreak of the epide:nic. Sick persons must pass through the ring four times. Nobody is allowed to speak or to laugh during this performance. After the shaman has finished, he speaks to the people, making statements intended to show them that he knows even their most secret thoughts.

The shaman wears his neck-ring of red cedar bark all the time.
Powerful shamans are able to transform stones into berries.
Their dance is so powerful that the ground gives way under their steps, and they disappear underground.

Songs of Shamans.

## 1. Song of Shaman, initiated by the Killer Whale.

 Making alive means of healing from this supernatural being wabai éhé' nau'alakué. ẻhé' supernatural being.
2. Gyilgyildöguilakıyastlē hai'ligyaiükoagsō nau'alnkuē rahai Making life long means of healing from this supernatural being wabai èhér nau'alakue. èhē' supernatural being.
3. Giyä'gyayapalayūqdöq nau'alakuēkoaqsï nau'alakuē mahai Going along under water supernatnral being from this supernatural being wahat èhē' nau'alakué. ēhē' supernatural being.
4. Sísonapalayūqdīq nau'alakuè nahai êē̃̄ nau'alakuē. Made to paddle under water supcrnatural being wahai é.iè supernatural being.

## Trinelation.

1. He received the power of restoring to life from the snpertatural being.
2. He received the power of lengthening life from the supernatural being.
3. His supernatural helper gave him the power to travel unde: water.
4. His supernatural helper gave him the power to paddle along under water.

## 2. Song of Shaman, initiated by the Killer Whale.

1. $K \cdot n e^{\prime} k \cdot k^{\prime}$ llagyīlakyastlöq nav'alakua. Life-maker real this supernatural being.
2. K•ǘselētlitlayatlüo nau'alakua. Making walk this supernatural being.
3. Tsici tltank'uek-zlayatlöo nau'alakua.

Making life short this supernatural being.
ks to them, mirl er shaman goes on the shaman's a the rear of the m , and hes 'puts ed must extend is then passed 1 with the ring. the latter must st, turn on that eft, standiug on ;o pass threugh ng the outhreak ring four times. ormance. After king statements ret thoughts. the time. erries.
way under their

Whale.
u'alakue nahai
atural being wahai
t'alakuè rahai atural being wahai
ru'alakuē wahai natural being wahat
nau'alakuē. apernatural being.
tural being. natural being. - water. g under water.

Whale.

Translation.

1. My supernatural power restores life.
2. My supernatural power makes the sick walk.
3. My supernatural power euts life short.

## 3. Song of Shaman, ivitiated by the Wolf.

 Marle to go aromid the world by making litelong past the sugernatural bai tlí'knala. bai magic.
 Mado to walk around the world by making lite long past the supernatural hai thï'loula.
bai magic.
 Ahead I the poor one making life long past the supernatural being hai tṑkoala. magie.

Thasslation.

1. The one who makes life long made me go all around the world, the supernatural being.
2. The one who makes life long made me walk all around the world, the supernatural beine.
3. The one who makes life long placed my poor self ahead of all, the supernatural being.

## 4. Song of Shaman, initiated by Baqbakuälanußsi'waè.

1. Ai, hai'alikyilaamadn nö'guaia k'oū'nastēs Baqhakuahnnuqsì'naè, dō'lcula. Ai, healing all the time I wildness of Baqbakuälınuqsi'waé, behold!
 Ai , saving life I wildness of Bą̣bakuālanuqsi'waé, behold!

## Translation.

1. Behold ! I am ableto heal by the power of the wildness of Baqbakuålanuqsi'waé.
2. Behold! I save lives by the power of the wildness of Baqbaknalianugi' waé.

## 5. Song of Shamon, initiated by the Echo.

 Yahau, healing with making life long with means of healing of tlō'knalakyas'o.
the magician real.

Blowing water with making life long with means of blowing water of tlō'kualahyar'o.
the magician real.

## Translation.

1. Yahau. The power that makes life long lets me heal with the means of healing.
2. Yahau. The power that makes life long lets me blow water with the means of blowing water.

## BIRTH.

The husband of an enceinte woman in the seventh month of pregnancy prepares to insure an easy delivery by collecting the following four medicines: four tentacles of a squid, a snake's tail, four toes of a
tond, und seeds of Peucedemum leiorenpum, Nutt. If the birth should prove to be hard, these objects are churred, powdered, and drunk by the mother. The toad's tues are nlso moved downwad along hor hack. 'This is called 'making the child jump' (diaynqu(i'). It is worth re. marking that Peucrdanum leiocropum is used as a powerful medicine also by the Sialis! tribes of Vancouver Island (see Sixth Report of the Committee, 1890 , p. 05 ), who call the plant $k \cdot E q m e e^{\prime} n$, while the Kwakiutl call it $k^{\prime \prime}$ 'aqmi'u. Judging from the form of the word, I think that it is rather Salish than Kwakiutl. Certainly the belief in the power of this plant was transmitter from ono tribe to the other.

During the periol of prognancy the hushmal must avoid to encounter squids, as this would have the effect of producing a hard delivery.

When the woman is about to be emfined, sloe leaves thit house accompanied by two of her friends who are to assist her. The latter dig a hole in the ground, and one of them sits down on the edge of the hote, stretching her legs across it so that her feet and the ealves of her legs rest on the opposite calge. Then she spreads her legs, und the woman who is about to be contined sits down on her lap, stradilling her legs so that both her fret hang down in the pit. The two women clasp each other's arms tightly. The thied womm squats behind the one who is about to be contined, pressing her knees against her back and embracing her elosely, so that her right arm passes over the right shoukler, her left arm under the left arm of her friend. The child is allowed to lie in the pit until after the afterbirth has been borne. Then the navel string is tied and cut, mul the child is taken up.

For fous days the afterbirth is kept in the house. A twig of yew wood about four inches long is pointed nud pushed into the navel string, which is then tied up. Four layers of cedar bark are wiapped aromad the afterbinth. Thint of boys is in most cases buried in front of the house door. That of girls is buried at high-water murk. It is believed that this will make them expert cham-diggers. The afterbirth of boys is sometimes exposed at places where moms will eat it. It is believed that then the boys will be able to see the future.

The navel string is bolieved to be a means of making children expert in various occupations. It is fastened to a mask or to a knife, which are then used by a grood dancer or carver, as the ease may be. Then the child will become a good dancer or cirver. If it is desired to make a boy a good singer, his navel string is attached to the baton of the singing master. Then the boy calls every morning on the singing master while he is tiking his breakfast. The singing master takes his baton and moves it once down the right side of the boy's body, then down the left side; once more down the right side, and once more down the left side. Then he gives the child some of his fool. This, it is believed, will make him a good singer.

I referred in the Fifth (p. 51) and Sixth (p. 62) Reports to the belicfs in regard to twins. I have received the following additional information in regard to this subject Four days after the birth of twins, mother and father must leave the villige and resort to the woods, where they stay for a prolonged period. They separate, and each must pretend to be married to a $\log$, with which they lie down every night. They are forbidden to touch each other. They must not touch their hair. Every fourth. day they bathe, rub their bodies with hemlock twigs, and wipe them with white shredded cedar bark. Their faces are painted red all the time. For this purpose they do not use vermilion, but ochre. Thry are not allowed

Lie birth should nd drunk by then long her liack. It is worth re. werful medicine Report of the ile the Kwakiutl think that it is e power of this
id to encounter lelivery.
hi: honse accomatter dig a hole ge of the hole, e calves of her and the woman ling her legs so omen clasp each the one who is and embracing oulder, her left red to lie in the navel string is

A twig of yew the navel string, wrapped around in fromt of the

It is believed birch of boys is is believed that
children expert knife, which are Then the child tke a boy a grood singing master. hile he is taking ves it once down de ; once more ren he gives the a goorl singer. ts to the beliefs nal information ins, mother and re they stay for $d$ to be married re forbidden to ery fourth. day vipe them with the time. For are not allowed
to do any work. These practices are continued for a period of sixteen months. During this period they must not borrow canoes or paddles from other people ; they must use bucket and dishes of their own. If they should use the belongings of other persons, the latter would have ulso twin children. The woman must not dig clams and the man must not catch salmon, else the clams and the salmon would disappear. They must not go near a fire in which bracken roots are being roasted. It is helievel that the birth of twins will prodice permanent Lackaches in the parents. In order to avert this, the man, a short time after the birth, induces a young man to have intercourse with his wife, while she in turn procures a girl for her hinsband. It is believed that then the backache will attack them. A year after the birth of the twins the parents put wedges and hammers into a basket, which they take on their backs and arry into the woods. Then they drive the wedges into a tree, asking it to permit them to work ngain after a lapse of four months.

All the young women go to the pit over which the twins were born and squat over it, leaning on their knuckles, becanse it is believed that after doing so they will be sure to bear children.

## nURIAL.

When a person is ahout to die, his friends spit water all over his body. After death the body is carefully washed, so that every particle of the hodies of the survivors that might adhere to the corpse may be removed. Even the places where their breath might have touched the body must be carefully washed. This is done in order to prevent that the survivors might accidentally hewitch themselves (see Sixth Report, p. 60). If the death occurs during the night, the bodly is left in the house until daylight; if it occurs during the day, it is removed at once. It must not be taken out of the door, else other inmates of the house would be sure to die soon. Either a hole is marle in one of the walls, through which the

Fig. 1.

body is earried out, or it is lifted through the roof. It is placed behind the house to be put into the box that is to serve as a coffin. If it were placed in the coffin inside the house, the souls of the other inmates would enter the coffin too, and then all would die. The coffin is placed at the right-hand side of the body. Then a speaker calls the relatives of the deceased, saying: 'Let the dead one take away all the sickness of his friends.' Then they all come and sit down at the side of the corpse, wailing for a short time. Now they arise and give the body a kick. They turn once toward the left, and give the body another kick, repeating this
action four times. This is called 'pushing away the love of the deceased,' that he may not appear in their dreams, and that his memory may not trouble them.' Then the wife of the deceased lets the children take of their shirts and sit down, turning their backs towards the corpse. She takes hin hand num moves it down the bucks of the children, then moving the hand back to the chess of the hody. With this motion she takes the aickness out of the hoolies of the children and places it into the body of the decensed, who thus takes it away with him when he is buried.

After this ceremony an olachen net is placed over the head of the boty, his face is pninted red, and the boly is wrapped in a blanket. Then it is tied up, the knees leeing drawn up to the clim. Now four men of the clans of which the deceased was not a member lift the body to phace it into the box. Fi, ur times they raise it. The fourth time they actually lift it over the box. Four times they mowe, but only the fourth time they actually let it down into the box. If the box should prove too small, they must not take it out again, but the booly is squeceed in as best they can. even if they should have to brank its neek or feet. The head is phaced at the edse where the sides of the box are sewed up (see Fifth Report, p. S0) because the soml is believed to escape through the joint. The soul leaves the body on the fourth day after death, escaping through the phace where the frontal fomtanel of the child is located. The lwas is tied up, as indieated in fig. 1. As soon as the four men who carry the coffin to the burial. ground raise it the women cease to whil, because their tears would recall the decensed. The relatives are not allowed to attend the funeral, as it is believed that their sonls would stay with that of their dead friend. Twelve women acompany the cotfin. Children are not allowed to $g^{\prime}$ with it. When the tree on which the borly is to be deposited has her" reached, four pow men are sent up to carry a rope by which to hanl up the coftin. When they have reached the branch on which the coftin is to be placed, they lower the rope. The men who remained below pretend three times to tie the rope to the contin. The fourth time they really tie it. Then the men in the tree pull up the rope. Three times they rest in pulling it up, so that he cottin reaches its final resting-place after having been pulled four times. It is placed on the branch and covered with a large board. Then the men climb down again, cutting ofl the branches for some distance under the coftin. When the men come down from the tree, the women resume their wailing. They scratch their cheeks with their nails. (The Koskimo use shells for this purpose.) After they have returned to the village the blankets and mats which the deceased used are hurnt, together with the objects which he used. Food is also burnt for him. All this is intended for his use, and is burnt beeause the dead can use only burnt oljects. If he has left $n$ widow, she must use his blankets, mats, kettle, de., once before they are burnt. After the death of a woman the widower must do the same. After four days a person belonging to another clan euts the hair of the mourners. The hair is burnt. This service is paid for heavily, because it is believed to shorten the life of the one who has rendered it. The climbers receive a payment of two blankets each; those who placed the corpse in the coffin and carried it to the burial-ground receive one blanket each for their services.

- The widow and the children of the deceased wear strings mate of mountaingoat wool and white cedar bark mixed, one arould the neck, one around the waist, and two conneeting nnes down the ebest; also stringe of the same material around mists, chlows, kuce, and ankles.
of the deceased,' memory may not children take off the corpse. She en, thell moving ion she takes the into the body of is buried.
the leead of the t blanket. Then Sow folur men of he body to phace ime they actually fourth time they ve too small, they as best they call, head is placed at th Report, p. 0 )
The soul leaves the place where s tied up, as imlioffin to the burialheir tear's would tend the finneral, their dead frimend. ot allowed to go eposited has hern which to haul up which the cotfin mined below pre. In time they really pe times they rost sting-place after anch and covered , cutting ofl the e men come down ratch their cheeks ose.) After they iich the deceased ed. Food is also burnt because the ow, she must use

After the death ar days a person ers. The hair is lieved to shorten eceive a payment coflin and carried services.
made of mountain. $e$ around the waist, me material aromid

Chiefs and common people were buried on separate trees. There is alon a separate tree on which twins are buried.

Nowalays the bodies are mostly buried in small grave-houses. The custom of raising the coffin three times bofore it is placed in its final restingplace is still adhered to.

The customs of the Koskimo and Tlathasigoala differ somewhat from those of the K wakiutl. They place the body in the box in the house. Before doing so the box is turned round four times. Then a hole is cut into the bottom of the box with an axe, which is raised three times before the hole is really cut. This is the breathing hole of the soul, which does not die or escape until the fourth day after the death of the body. The coffin, before it is carried to the burial-ground, is placed on the beach.

The Kwakiutl paint twins, before they are buried, red all over. Foar feathers are attached to the coffin. Nobody is allowed to wail for then.a. The surviving twin is washed in the water with which the corpse of the dead one was washed.

When a person dies by an accident, and his body is not recovered, a grave is made for him, which consists simply of painted hoards. The saying is that, if this were not done, it would be as though a dog had died. Nobody is allowed to walk behind such a grave, as by doing so he would indicate his desire to lie in a grave.

The widow, particularly if she has many children, must undergo a very rigorous ceremonial. On the evening of the thind day after the death of her husband, her hair is cut. At the sthne time a small hut is built for her. It is made of the mats which were hanging around the bed of the deceased. The roof is made of the boards which wore plated wer his bed in order to keep the soot of An wh woman, preferably one who has been a widow four times, is appointed to assist her. On the fourth morning after the denth of her hushand, she must rise before the crows ery. She is not allowed to lie down, but must sit all night with her knees drawn up to her chest. She eats only four bites four times a day, and drinks only four mouthfuls four times a day. Before taking water or food she raises it three times. If she thinks that her hushand has been murdered, she takes her fool up, saying that it is the neek of her husband's enemy, and calling his name, she lites it four times. Then she throws it into the fire, saying : 'This will be your fool whell you are dead.' That means that the person whom she named must soon die. When she is tired she stretches her legs, first the one, then the other, naming her enemy. This is also believed to bring him death. After four days the old woman washes her and wipes her with a ring of hemlock branches, as described above. This is repeated four times in intervals of four days. After the last washing her old blanket is hung over the stump of a tree, and her hat, which she wears all the time, is hung on top of the stump. Then she is given new clothing, and is taken back to the house. There she must stay in one corner, where she has a small fire of her own. Her children are not allowed to see her. When she leaves the house, she must pass out of a small door of her own. Four times she must turn before putting her foot in the doorwa.\%. Four times she must put her foot forward before actually going out, and in the same manner she returns. The old woman now washes her every sixth diy, and rubs her with the ring of bemlock branches. After the fourth washing she is pernitted to come to the fireplace, but she must avoid going around the fire. Now the old woman washes her every eighth day, and then four times more every
twelfth day. Thus the whole period extends over one hundred and twenty days.

If the woman is poor, and has many children, four washings in intervals of ten days are sulistituted for the washings of the last eighty days, thus reducing the whole period to eighty days. During all this time she must not cut her hair. She does not wail during the first sixteen days of the mourning period while she is confined in the small hut.

## GAMBS.

1. Eibayu.-These dice have the shape indicated in fig. 2. The Fig. casts count aceording to the narrowness of the sides. This game is also played ly the Tlingit of Alaska.
2. Tl $E^{\prime} m^{\prime}$ boayu. - A stick, about three feet long, with a
 knob at its end, is thrown against an elastic bourd, which is placed upright at some distance. If the stick rebounds and is caught, the player gains four points. If it rebounds to more than half the distance from the player to the board, he gains one point. If it falls down nearer the board than one. half the distance, or when the board is missed, the player does not gain any point. The two players throw alternately. Each has ten counters. When one of them gains all the counters, he is the winner of the stake. When the stick falls down so that the end opposite the knol, rests on the board, the throw counts ten points.
3. A'lagon, the well-known game of lehal, or hiding a bone ; played with twenty counters.
4. Trénk oayn, or carrying a heavy stme on the shoulder to test the strength of those who participate in the game.
5. Mō'k:oa.-This game was introduced from the Nootka. It is played between tribes. An object is given to a member of one tribe, who hides it. Then four members of another tribe must guess where it is. They are allowed to guess four times. If they miss every time, they have lost. This game is piayed for very high stakes.

## various beliefs and customs.

In seal feasts the chest of the seal is given to the highest ehief; the feet are given to those next in rank. The young chiefs receive the flippers, and the tail is given to the chief of the rival clan, who must give a feast in return. The hunter, before returning home, cuts off the head of the seal and gives it to his steersman. He eats the kidney before going home, and cuts a strip three fingers wide along the back. These customs are said to have been instituted by ö́maqta'alatle, the ancestor of the clan G'yi'gyilk $\cdot a m$ of the $K^{\cdot} \cdot \bar{o}^{\prime}$ moy ${ }^{\prime} \bar{u}$.

The lowest carving on a totem pole is that which the owner inherited from his father. The higher ones are those which he obtained by marriage.

The huntur, before going out to hunt seals or sea-otters, or other sea animals, rubs his whole canoe with the branches of the white pine, in order to take away all the bad smell that would frighten away the animals.

In order to secure good luck, hunters of sea animals bathe in the sea before starting. Hunters of land animals bathe in fresh water. Both rub their bodies with hemlock branches.

Ired and twenty
ngs in intervals ghty days, thus time she must een days of the
(n fig. 2. The the sides. This
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owner inherited he obtained by
ers, or other sea white pine, in hiten away the
athe in the sea $h$ water. Both

Of the first halibut caught in the season the stomach is eaten first. then the pectoral fins, next the head. 'The rest is divided. If this were not done, the halibut would disappear.

Hunters carve the figure of any remarkable animal that they have silled on the butts of their guns, or on their bows.

The souls of hunters are transformed into killer whales; those of hunters who pursue land animals become wolves. Only when a kill.r whale or a wolf dies can their souls return and be born again. Hunters have the how seat of their canoes ornamented, and it hole cat in the centre of the seat. It becomes their dorsal fin when they become killer whales after their death. It is believed that, after the leath of a hunter, the killer whale into which he has been transformed will come to the village and show itself. When a great number of killer whales approach a village, it is believed that they come to fetch a soul.

Not only hunters are transformed into killer whales. I was told that at one time a killer whale had been killed, the flipper of which showed a scar as though it had been burnt. Not long before this event a girl had died who had at one time burnt her hand. She was identified with the killer whale.

When a wolf has been killed, it is placed on a Mlanket. Its heart is taken out, and all those who have assisted in killing it must take four morsels of the heart. Then they wail over the body :

Âlawēstens hègyōsõ quens nemóqtsēqulè-i.c., Woe: our great friend.
Then the body is covered with a blanket and buried. A bow or a gun with which a wolf has been killed is unlucky, and is given away by the owner. The killing of a wolf produces scarcity of game.

Wolf's heart and fat are used as medicines for heart diseases (sen Sixth Report, p. 61).

Women are forbidden to touch a wolf, as else they would lose their husbands' affections (see Sixth Report, p. 61).

The sereech owl is believed to be the soul of a deceased person. The Indians catch them, paint them red, and let them free, asking for long life.

The root of the bracken (Pteris aquilina, L.) is believed to know everything that is going on in the house in which it is being roasted. It must be treated with great respect. If a person should warm his back at the fire in which it is being roasted, he will have backnche. Parents of twins, and people who have had sexual intercourse a short time previously, must not enter a house in which the roots are being roasted.

When a person dreams that he goes up a mountain and the latter tilts over, it signifies that he will die soon.

The grom of the red pine is chewed. That of the white pine is not used by girls, because it is believed to make them pregnant.

The world is deseribed as a house. The east is the door of the house; the west is the rear of the house. North is called 'up the river,' south 'down the river.' In the north of the world is the mouth of the earth. There the dend descend to the country of the ghosts.

The part of the beach inmediately to the west of Fort Rupert, in front of the place where formerly the village of the sub-tribe Kuéqa stood, is called the village of tho whosts, who are believed to resite there from time to time.

When there is an eclipse of the sun a man, named $B \bar{a}^{\prime} w u l e \bar{e}$, is required to sing :-

Hök•oai', hōk oai', hōk•oalai', ā'tlas lalaq ts'ā'ya laqsgya Bāwulè'-
Vomit it, vomit it, vomit it, else you will be the younger brother of Bàwule'.

In order to gain the love of a girl the following philter is used : The tongues and gizzards of a raven and of a woodpecker are placed in a hollow stick, together with some saliva. They are mixed with the latter : the tube is closed and worn under the blanket. The underlying idea was explaind to me thas: The woodpecker and the raven are pretty birds; therefore the girl will consider the man who wears them just as pretty and attractive.

The tongue of a snake or of a frog is also used as a philter. They are believed to make the wearer irresistible to everybody.

Another philter is as follows: The man wears a snake skin on his body for some time. About the month of August he gathers a root called tl'étayas, which resembles in shape two people embracing each other. He procures four hairs of the girl whom he loves, which, together with four hairs of his own, he places between the two portions of the root which resemble the two people. The root is tied up with sinews taken from a corpse, and wrapped in the snake-skin which the man has been wearing. For four days aiter, the man must not look at the girl. Then she will call him, but he must not follow her. Finally she will come to him.

In order to bewitch a person it is necessary to obtain some of his soiled clothing, hair, or hlood. I described some methods of witcheraft in the Sixth Report (p. 60). The following method is also used : The clothing of the enemy is placed in the mouth of a lizard, the head of which has been cut off. Then a snake's head is pulled over the lizard's head, so that the latter is in the mouth of the snake. The whole is placed in the mouth of a frog, which is then sewn up. This bundle is tied as tightly as possible with the sinews of a corpse, and placed inside a stick which has heen hollowed out, and is then tied up again with the sinews of a corpse. The whole is then covered with gum. This package is placed on the top of a hemlock-tree which is growing at a windy place. In winter this method of witcheraft does not do much harm, but as soon as it grows warm the victim must die.

If a person is believed to be bewitched ( $\bar{e}^{\prime} k \cdot a$ ) his body is rubbed with white cedar bark, which is then divided into four parts, and buried in front of four houses, so that the people when entering or leaving the house must step over it. This will break the spell.

If the children of a couple always die while very young, the little finger of the last child to die is wound with a string. A notch is cut in the upper rim of the burial box, in which the finger is placed. Then the cover is put on, and the finger is cut off. It is hidden in the woods that nobody may find it. The body of the child is placed on a new tree, not on the tree on which other children are put.

## II. Tife Houses of the Tsimsiman and Nîk'a'.

The houses of the Tsimshian and of the Nîsk $a^{\prime}$ are square wooden structures, like those of the Haida and Kwakiutl, but they differ somewhat in the details of construction. While the house of the Haida (see
'wulē, is required
gya Bāwuléyounger brother
lter is usel : Thn : are placed in a 1 with the latter: derlying idea was are pretty hirds; just as pretty and shilter. They are mnake skin on his he gathers a root e embracing each s, which, together ortions of the root vith sinews taken the man has been at the girl. Then e will come to him. some of his soiled witcheraft in the ised : The clothing nead of which has tard's head, so that $p$ is placed in the $s$ tied as tightly as ea stick which has sinews of a corpse. placed on the top e. In winter this soon as it grows
ody is rubbed with arts, and buried in r leaving the house
y young, the little A notch is cut in placed. Then the in the woods that on a new tree, not

## Nîsk ' $\mathrm{A}^{\prime}$.

are square wooden they differ some. of the Haida (see

Fig: 3.


Fig 4.


Dr. G. M. Dawson, ' Report of Progress, Geol. Surv. of Canada,' 1878-79, Plates III., IV., and V.), generally has on each side of the central line three heavy beams which support the roof, the house of the Tsimshian and of the Kwakiutl has only one pair of heavy beams, one on each side of the doorway. In the Kwakiutl house these two beams, which rest on heavy posts, stand no more than 6 feet apart (see ' Proc. U.S. Nat. Mus..' 1888, p. 210). In the houses of the Tsimshian and Nîsk $\mathrm{a}^{\prime}$ they stand about halfway between the central line and the lateral walls. This arrangement necessitates that provision is made for a ridge-beam. The heavy beams $B$ rest on the uprights $U$, which are seldom carved. On top of the beams four supports S are laid, on which rests the ridge. beam R. The latter consists of two parts, leaving a space in the middle fer the smoke-hole. Sometimes, but not regularly, two additional beams R rest on these supports. In a few cases the central ridge-beam is then supported by a smaller support $\mathbf{S}^{\prime}$. The lower end of the roof is either arranged as shown in figs. 3 and 4 , or as indicated in fig. 5 . In the former

Fig. 5.

case the rouf-supports are separate from the walls; a beam V is laid on the uprights $\mathbf{C}$, and the roof-boards rest on the beams $\mathbf{R}, \mathrm{B}$, and V . In the latter case (fig. 5 ) the coruer-post $\mathbf{P}$ is connected with the rear corner-post by a square beam which supports the lower ends of the roof-boards. The walls of the old houses consist of horizontal planks of great width. The thick planks of the front, rear, and sides (figs. 4, i) are grooved, and the thinner planks are let into these grooves. The two mouldings of the front are also thick planks, which are grooved. Over the door D is a short, heavy plank, on which rests a single thinner vertical plank. The construction of the back may be seen in fig. 3. Sometimes the houses are built on steep banks, so that only the rear half is built on the ground. In this case a foundation of heavy cedar-trees is built. A short log is placed with its end into the bank, the butt end standing out towards the beach, where the side wall is to be. Another $\log$ is placed in the same manner where the second side wall is

Canada,' 1878-79, of the central line of the Tsimshian , one on each side ms, which rest on . U.S. Nat. Mus.'. Nîsk 'a' they stand teral walls. This, ridge-beam. The ldom carved. On rests the ridge$e$ in the middle for ional beams R rest beam is then sup. the roof is लither 5. In the former

beam $V$ is laid on mis $R, B$, and $V$. ted with the rear ower ends of the prizontal planks of d sides (tigs. 4, J) grooves. The two re grooved. Over ; a single thinner ee seen in fig. 3. hat only the rear ndation of heavy into the bank, the side wall is to be. second side wall is
to be. A third heavy $\log$ is placed over the butts of the two projecting logs. Then two more logs are put on top of the preceding one with their ends into the bank, and thus a foundation is built up to the level of the embankment. This is covered with a platform, and the house is built about eight or ten feet back from its outer edge, so that the platform forms the front portion of the floor of the house, and also a walk leading to the house-door.

## III. The Growtii of Indian Children from the Interior of Britisif Columbia.

The talle below shows the results of a compilation of the rates of growth of Indian children of the following tribes:--Ntlakyà pamue, Shuswap, Okanagan, Kalispelm, Yakima, Warm Springs. I have combined all these tribes, because the adults have very nearly the same stature, and because the geographical environment is very much alike. The numbers of individuals are rather small, but nevertheless a few results of general interest may be deduced from it.

It will be noticed that in the eleventh, twelfth , and thirteenth years girts are taller than hoys. This agrees elosely with the period during which the same phenomenon takes place among the whites, and is later than among the Indians of southern latitudes. The decrease in variability is not very well marked, probably because there is a considerable uncer tainty in regard to the estimated ages of the children. Still, it appears that there is a distinct drop in the fifteenth year in bays, and in the thirteenth year in girls. Amoug the Mission Indians of Southern California this drop takes place hetween the thirteenth and fourteenth years in boys, between the ninth and eleventh years in girls. Among the white children of Massachusetts the drop takes place between the fifteenth and sixteenth years in boys, between the fourteenth and fifteenth years in girls -i.e., nearly at the same time as, or a little later than, among the Indians of British Columbia.

| Boys |  |  |  | Giklis |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Number of cases | Average variation | Averace stature | Average stalure | A verage variation | Number of cases |
|  |  | mm. | ItII | 116. | 11111 |  |
| $\because$ | i | $\pm 2 \cdot 8$ | $7!16$ | - | $\cdots$ | - |
| 3 | 3 | $\pm 3 \cdot 0$ | $85 \%$ | 860 | $\pm 15$ | 4 |
| 1 | 1 | $\pm$ 5\% | 953 | 990) | $\pm 24$ | 5 |
| - | 17 | $110 \%$ | 1,673 | 1,073 | $\pm 33$ | 10 |
| 1 | 12 | $\pm 8$ | 1,161 | 1.100 | $\pm 2 \cdot 8$ | 14 |
| 7 | 12 | $\pm 3 \cdot 6$ | 1200 | 1,207 | : 40 | 11 |
| 8 | 13 | $\pm 4 \cdot 3$ | 1,256 | 1.207 | $\pm 5 \cdot 1$ | 20 |
| ¢ | 20 | $\pm 1: 3$ | 1,28i; | 1,263 | $\pm 45$ | 14 |
| 10 | 2! | $\pm 65$ | 1,36.5 | 1.338 | $\pm 4 \cdot 8$ | 25 |
| 11 | $1!1$ | $\pm 8 \cdot 8$ | 1,386 | 1,400 | $\pm 50$ | 18 |
| 12 | 37 | $\pm 5 \cdot 0$ | 1.423 | 1.443 | $\pm$ (6\%) | 19 |
| $1: 3$ | Is | $\pm 5!$ | 1,461 | 1,487 | $\pm 5 \cdot 1$ | 13 |
| 1.1 | $\because 1$ | $\pm 5 \cdot 8$ | 1,525 | 1,50\% | $\pm 13$ | 16 |
| 15 | 18 | $\pm 3 \cdot \gamma$ | 1,578 | 1,517 | $\pm 6.0$ | 15 |
| 16 | 17 | $\pm 5 \cdot 1$ | 1,611 | 1,537 | $\pm 4 \cdot 4$ | 20 |
| 17 | 12 | $\pm$ \% | 1,622 | -- | - | - |
| 18 | 5 | $\pm 2 \%$ | 1,674 | - | - | - |
| 19 | 6 | $\pm 52$ | 1,692 | - | - | - |

It is of interest to compare the rate of growth of Indian and white children. In the following table I give the statures of the Indian children of British Columbia and of the white children of Worcester, Mass. :-

| Age : Years | Boys |  |  | Giris. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Indian | W bite | Difference | Indian | White | Difference |
| 5 | 1,073 | 1,097 | -24 | 1,073 | 1,074 | -1 |
| 6 | 1,161 | 1,127 | +34 | 1,100 | 1,113 | -13 |
| 7 | 1,200 | 1,170 | + 30 | 1,207 | 1,175 | +32 |
| 8 | 1,256 | 1,223 | +33 | 1,207 | 1,216 | -9 |
| 9 | 1,286 | 1,270 | +1is | 1,263 | 1,266 | -3 |
| 10 | 1,365 | 1,340 | +25 | 1,338 | 1,328 | +10 |
| 11 | 1,386 | 1,388 | - 2 | 1,400 | 1,370 | +30 |
| 12 | 1,423 | 1,429 | - 6 | 1,443 | 1,447 | - 4 |
| 13 | 1,461 | 1,476 | -15 | 1,487 | 1,479 | +88 |
| 14 | 1,527 | 1,543 | $-16$ | 1,508 | 1,537 | -29 |
| 15 | 1.578 | 1,622 | -44 | 1,517 | 1,570 | - ${ }^{\text {- }}$ |
| 16 | 1,611 | 1,658 | -47 | 1,537 | 1,584 | -47 |
| 15 | 1.622 | 1,685 | -63 | - | 1,594 | - |
| 18 | 1,674 | 1,700 | -26 | - | 1,591 | - |
| 19 | 1.642 | 1,713 | -21 | - | -- | - |

It appears from both tables, although more clearly in the case of boys, that the Indian child is taller than the white child, although in the adult the inverse relation of statures prevails. I have shown at another place that a similar relation prevails between full-bloods aud half-breeds ('Verh. Berliner Anthr. Ger.,' 1895, p. 386). It is therefore probable that the difference in the laws of growth is a racial phenomenon.

## NASAL INDEX OF SKULLS.

On p. 23 of the Tenth Report of the Committee I pointed out the difference of racial types found along the coast, and stated (p. 24) that the nose of the Kwakiutl represents a peculiar type which is not found in iny other region of the coast. I have investigated the same question on as series of skulls, and have obtained the following results :-

Nasal Indices of Skulls of-

| Index | Kwakiutl | Comox | Nanaimo and Sanitch | Songish, not deformed | Chinook |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 37 | 1 | - | 1 | - | - |
| 38 | 1 | $\cdots$ | - | - | - |
| 39 | 1 | - | - | - | - |
| 40 | 1 | - | 1 | - | - |
| 41 | 2 | 1 | - | + | 1 |
| 42 | 2 | - | 3 | $+$ | 1 |
| 43 | 5 | 1 | $\cdots$ | 2 | - |
| 44 | 2 | 1 | 3 | 2 | 1 |
| 45 | 2 | - | 5 | - | - |
| 46 | 2 | 1 | - | 2 | 2 |
| 47 | 3 | 1 | 3 | 1 | 1 |
| 48 | - | 1 | $\underline{2}$ | - | 2 |
| 49 | 1 | - | 2 | - | 1 |
| 50 | - | - | 3 | - | 2 |
| 51 | - | - | 4 | - | - |

Indian and white he Indian children sester, Mass. :-

Giri.s
White $\mid$ Difference

1,074
1,113
1,175
1,216
1,266
1,328
1,370
1,447
1,479
1,537
1,570
1,584
1,594
1,591
ly in the case of child, although in I have shown at on full-bloods and 3). It is therefore acial phenomenon.
pointed out the stated (p. 24) that ich is not found in same question on ts :-

Nasal Indices of Skull of-(continuer).


It appears that the nasal index of the $K$ wakiutl is by far the lowest, and that it increases among the Coast Salish. The nasal bones are at the same time large and high, while among the Coast Salish they are small, decidedly flat, and sometimes synostosed.

## IV. Linauistic Notes.

1. KWAFIUTL.

I indicated on p. 107 of the Sixtb Report of the Committee that there seemed to exist cases in Kwakiutl. I have since investigated this matter more fully, and find that cases clearly exist.

There is a definite article which has the following forms:-
Nominative: da.
Genitive: sa Accusative: qa.
Locative: laqa.
The indefinite article is expressed only in the genitive and locative :-

$$
\begin{array}{ll}
\text { Genitive: } & \text { s. } \\
\text { Locative: } & \text { luq. }
\end{array}
$$

The possessive pronoun he.s the following cases:-
1st Person. 2nd Person. 3rd Person.


Exampleṣ: 1. Definite Article:-
Nominative: Yä'k'ègyatlé da nemō'l'ue begnä'nem.
It said the one man.
Genitive: Gyi'k'amaya sa mū́q'ènôq.
The chier of the killer whales.
Accusative: Aatltsaí' $\cdot a$ qa $d \bar{o}^{\prime} r v e q$.
He tore the cedar twigs.
Locative: $\quad \operatorname{li}^{\prime} g y, \eta a \quad$ li'qa tx'Eli'tll.
He arrived at the lake.
2. Iudefinite article :-

Killer whale painting on tront of the house.
Genitive: t'smitis 8 T'sisitis.
the beach of 'Tsa'yis.
Accusative: $K^{\prime} \cdot a^{\prime} q q^{\prime \prime} \quad$ niaj).
He found water.

He built a house of the Louse at K'a'k'a.
3. Possessive pronoun:-
 This my nettle harpoon-line.
Genitive: Iä'lakemen skn $\bar{o}^{\prime} m p \overline{\boldsymbol{e}}$. I am sent by my father.
Accusative: Lamen aq'ét qsin likyi'yn.
1 took m:- hammer.
Locative: Laī'tl lä'gen gyö'kua.
He entered in my house.
3rd Person. Nominative: (iyälums.
His house.
Genitive: Cryō'guat sīs gӯ̈'zue.
He had a honse of his house.
 He took his staff.

But he said to his younger brother.
I pointed out in the Sixth Report that these possessive forms may be modified according to the location, as near speaker, near person addressed, absent visible, absent invisible. I have not, so far, discovered these distinctions in the genitive, while they occur in all the other cases.

## 2. Nisk'A.

As my treatment of the Nisk a language in the Tenth Report of the Committee was very brief, I give here some additional information in regard to it.

In the Fifth Report (p. 82) I have treated the formation of the plural in the Tsimshian, and Count von der -chulenburg has treated the same subject on pp. 9 ff . of his work (' Die Sprache der Zimslifan-Indianer.' Braunschweig, 1894). The principles underlying the formation of the plural will become clearer by the following remarks on the formation of the plural in the Nisk'a dialect:-

1. Singular and plural have the same form.

This class embraces the names of all animals except the dog and the bear, trees, and a great many words which cannot be elassified. I give here a list of some of these:-
ban, belly.
mi'dz'ikys, breast.
$n \hat{i s}^{2} k$, upper lip.
tlätsq, tail of tish.
hanti'l, arrow.
lūatlgyáàôtk', axe.
ts'antîk'sktqa', moccasins. k'asä́' $e q$, front.
lak ${ }^{\text {s }}$, fire.
$a k y c$, water.
peli'st, star.
axk', night.
ia'ns, leaf.
mäg' ${ }^{\prime}{ }^{\prime} u$ thst, salmon berry.
laq'amá'k's, prairie.
ts'aky, dish.
$\boldsymbol{r} \hat{a}^{\prime}$ ôs, dish.
k'ütl, yes.
ts'è $n$, inside.
nuldi'gyı̂t, warrior.
al'a'lgyizq, language.
$l \overline{e ́}^{\prime}$ klgyit, feast.
locana'tlk', to be astonished.
$l m q / a^{\prime} k$, to fall (rain, snow).
lij $/ a^{\prime} k$, to hang (v. a.).
$k^{\prime}{ }^{\prime}{ }^{\prime} m e q k^{\prime}$, to wish.
rms may be modified ressed, absent visible, tions in the genitive,
ort of the Committee trd to it.
n of the plural in the ssubject on pp. 9 ff . of 1894). The principles the following remarks
g and the bear, trees, lere a list of some of
leaf.
$z^{\prime}$ inkst, salmon berry. $n u^{\prime} k \cdot s$, prairie.
, dish.
dish.
yes.
$q$, front.
inside.
'gyitt, warrior.
$y$ yîq, language.
$y i t$, feast.
astonished.
(rain, snow)
(v. a.).
sh,
in'ky, to thnnder. saanunôk, to rebuke. silfauĉ' $l$, to accomprany. dē ${ }^{\prime} l k^{\prime} m \ldots q k^{\prime}$, to reply. $m^{\prime \prime} l s k$, to damn. lü'min, to sing. gyé, to see.
hasa'k, to want. tlmi'sem, to help, hithet, to rush. g! $\hat{i}^{\prime}, 1$ eq, to ask. $k " l l^{\prime} n$, to leave something. buk, to feel.
2. The plural is formed by redupliontion, the beginning of the word, as far as the first consonant following the first vowel, being repeated with weakened vowel. The accent of the worl is not changed. The reduplicated syllable remains separated from the reduplicated word by a hiatus.
This is particularly evident in words beginning with a vowel. In these there is a distinct pause between the terminal consonant of the reduplication and the initial vowel of the reduplicated word:-
$\hat{0} \|$ plural $\hat{i} \boldsymbol{H}^{\prime} \hat{0} \boldsymbol{O} n$, to throw.
üm ", кm'ü'm, good.
$a^{\prime} \lg y \hat{\imath} q$ plural $\varepsilon l^{\prime} a^{\prime} \lg y i ̂ q$, to speak.

It seems to me that this method of forming the plural may be considered duplication affected by certain laws of euphony. Monosyllabic words beginning and terminating either with a vowel or with a single consonant, according to the rule given above, are duplicated. Monosyllabic words terminating with a combination of consonants drop all the elements of the terminal cluster of consonimits, except the first one, because else there would be a great accumulation of consonants in the mildle of the word. The same causes that bring about the elision of the terminal cluster of consonants probably affect polysyllabic words in such a manner that the whole end of the word was dropped. This seems the more likely, as the repeated syllable has its vowel weakened. If a polysyllabic word was thus repeated the effect must have been very similar to the repetition of a word with a terminal cluster of consonants. For instance, wulï' , to know, duplicated with weakened vowels, would form wulamuli'h. In this word, accorling to the rule governing the reduplication of monosyllabic words with a terminal cluster of consonants, the first $a$ would drop out, so that the form wulvulín would originate.

A few euphonic changes of consonants take place :-
$k y, g y$, and $k$, following the first vowel of the word, are aspirated in the reduplication, and form $\boldsymbol{\pi}$.
$g$ and $k$ are also aspirated, and form $q$.
$y$ becomes the surd aspirate $n$.
$t s$ becomes $s$.
The weakened vowels have a tendency to change into s or $\hat{\imath}$. The variability and indistinctness of the vowels make it difficult to establish a getneral rule.

I classify the examples in order to bring out the points referred to above.
a. Monosyllabic words beginning and terminating either with a vowel or with a single consonant.

| in $^{\text {H }}$ | plural | iu'io'rl, to throw. | t'aq | plural | $t^{\prime} a q t^{\prime} a^{\prime} q$, lake ; also $t^{\prime}{ }^{\prime} t^{\prime} a^{\prime} q$. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 18 | " | Es'u'u, dog. | diôk | " | ditik doo' $k$, to chmp. |
| im |  | sim'a'm, good. | $t \bar{\square}$ | " | $t ' s t{ }^{\prime} \bar{c}^{\prime}$, valley. |
| 17 | ", | al'o'l, bear. | mitl | " | mêtlmê'tl, to tell. |
| dan | " | dînda'ı, till. | gy $\mathrm{I}_{\text {c }}$ | " | gyı̂cgyi'c, wrong. |
| dec | " | d'îed'e'ce, to push. | (ii) $110^{\prime \prime}$ | " | (lī) "nonô', hole. |
| that | " | tleptla'p, deep. | $l a^{\prime}{ }^{\text {op }}$ p | " | lepla'op, stone. |
| butl | " | betllue'tl, to lay down a flat thing. | $\begin{aligned} & \text { tsap } \\ & \text { tsal } \end{aligned}$ |  | tsiptsa'p, to do. ts'ilts'a'l, face. |
| hap | " | hapha'p, to shut. | $t s t^{\prime} \mathbf{e}^{\prime} \hat{i} p$ | ", | ts'spts'ci'in, to tie. |

b. Monosyllabic words beginning with a vowel or a single consonant, terminating with a cluster of consonants.

| tieph ${ }^{3}$ | plural | sijssi'cipk', sick. | $k \cdot \hat{c} c k{ }^{\text {c }}$ | plural | k'aski ${ }^{\prime}$ ' $k^{\prime}{ }^{\prime}$, nar |
| :---: | :---: | :---: | :---: | :---: | :---: |
| trieph' |  | $t^{\prime} \hat{i} p t s^{\prime} \bar{\epsilon}^{\prime} p k^{\prime}$, hard. | dēlph | " | déldé'lpk', sb |
| i. $\mathrm{L}^{\text {c }}$ |  | is 'in'sh', $^{\prime}$, stench. |  | " | (li) deldi'lt ${ }^{\prime}$, to me |
| ck ${ }^{\text {b }}$ |  |  | tlantk' | " | tlentla'ntk', to move. |

mith plural mitmíck full.
gyitk " g!itgyit ${ }^{\prime} t k^{\prime}$, to swell. hank
gyallk " gyitlyyin'tlk', to pierce.
," hunha'un, thin.
tlinth gyiêple étho maì'schn yültk'
plural tlentli'ntu, to be angry
" gyígyiépke, high.

- at'e'tice, to end.
- mı.гmaй́xkч, meek.
, yallaíllk', to retarn.
o. l'olysyllabic worls beginning with a vowel or a singlo consonant.

| $s L^{\prime} \times b^{\prime} \times n$ | pl | v. | dis'liu | plural | dildï'lu, tongue. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| had'u'y $h^{\prime}$ | , | haidhud $a^{\prime} y k^{\text {a }}$, had. | $l \overline{o l}^{\prime} l a k$ ' |  |  |
| 2'ı | " | , | (qıan)mäla |  | (gan)malmi'lr, bott |
| i'sigh | " | , 1 to |  | , | ( 1 dorn |
|  |  | oad, to carry | ma'ly iksk |  | :lma' ly'cikysk', heave |
| a'd'ikys |  |  |  |  |  |
| $g y \hat{i} d x$ 'q |  | idy!i'dseq, to ask. | ha'qy'ut |  | q ha'ry' ${ }^{\text {det, sweet }}$ |
| авяi'н |  | us'usil'u, foot. |  |  | nelling. |

d. Change of $k y, g y$, and $k$ into $n$.
t'aky plural t'iut'a'ky, to forget. sakysk
hakiys " hanha'ky, to abuse.
Thlye ", an'öhyc, to clrop.
iáaíakys " in'ia'tôks, to wash.
aikys " in'ak!ys, broad.
tlïgya't
mink ${ }^{*}$
gy ${ }^{\prime \prime} k$
hokek
plural sinsa' $14, s h^{\prime}$, clean.
" tlintliqya't, cripple
", mîumi'k', to catch fish.
, gyângyu'kc, fish jmups.
", hanhō'kck', to join others.
dakytl ", dimla'liytl, to lie around.
c. Change of $y$ into $\pi$.
$h \bar{v} y i q$ plural hìuhī'yiq, just.
$f$. Change of $g$ and $k$ into $q$.

| g' $\pi^{\prime} n s k^{6}$ | plural |  |
| :---: | :---: | :---: |
| griikeck |  |  |
|  | " | *kqsio' |
| k'ïl | ," | $k \cdot w q / k \cdot i l k t l$, to drag. |
| $a k \cdot k ' t l$ |  | $a q^{\prime} a^{\prime} k k^{\prime} t l$, to arrive. |

$g$. Change of $t s$ into $s$, and of $d z$ into $z$.

| yats | plural yis'ia'ts, to chop. |
| :---: | :---: |
| *'ots | ., $k^{\prime}$ ' 2 sk' $\hat{\prime}^{\prime}$ 'ts, to chop a tree. |
| he'its | ", héshé'its, to send. |
| $a^{\prime}$ 'laiks | az'u'dzîks, proud. |
| hë'tsum eq | hushét tumeq, to command |

h. Words beginning with combinations of consonants do not always reduplicate in the manner described above, as it sometimes results in an accumulation of corsonants in the middle of the word. If such inadmissible clusters shomld result, oniry the first consonant of the word is repeated. In such cases initial $\eta$ is transformed into $k$.

$$
\begin{aligned}
& \text { ptô } \\
& q t l k \cdot \hat{o} \\
& \text { plural pptín, door. } \\
& \text {, keqtlk ô, to pray. } \\
& \text { qt lhä'luq plural } k \cdot E q t l k i{ }^{\prime} l u q \text {, to scold. }
\end{aligned}
$$

(See, bowever, the words with initial $t 8$ on page 10.)
$i$. Words beginning with $h w$ have in the plural $h i v w$. When $k w$ is considered at one syllable, the semi-vowel $w$ standing for a weak $u$ and $n$, the reduplicated form would be $h w h w$, which, when pronounced rapidly and with the following vowel, must naturally become hūw. I believe, therefore, that this plural must be included in the reduplications:- .

tlentli'nth, to be angry. gyipgyéphe, htgh. $a t^{\prime} e^{\prime} t k ' o$, to end. mur.rmaí'xku, meek. yîlyä'llk', to retann.
consonant.
1 dìldé'llu, tougue. $\ln / l \overline{r i}^{\prime} \ln k$, ghost. (qan)misimi'ln, bottom. kl a'lg!it to to peak. melmi't ${ }^{\prime}$ 'ikitsk', heavy. hioshoada'l: bow. hambho'mtsï̀, to kiss. huqha'q!'ut, sweet smelling.

Insa'ky:k', clean. intlig!:/a't, cripple "t̂mma'l", to catch fish. yčngyn'kc, fish jumps. anhư'kch $h^{4}$, to join others,
ration.
ree.
land.
not always reduplicate in accumulation of cos sters should result, onip initial $q$ is transformed
 n•eqtsa'e, thick.
ge 19.)
hen $k w$ is considered as $x$, the reduplicated form e following vowel, must must be included in tha
hūnízl, to do.
hūnó', to call.
hūn $\bar{a}^{\prime} \boldsymbol{H}$, paddle.
j. Irregular reduplications,
a. Elision of the consonant following the first vowel.

| gy in | plural | gyígyi'n, to give food. |
| :---: | :---: | :---: |
| g!ik | " | gyigui'k, to buy. |
| tsinhy | " | ts'ntrat $k y$, dish. |
| $t$ 'ıq | " | $t$ tet'a'g, lake. |
| $t s^{\prime} \bar{p} p$ | " | ts'sis'e' $n$, bone. |
| gytt | ," | g!rigy ${ }^{\prime} t$, people. |
| mial | " | mıй̄l, canoe. |

3. Introduction of (euphonic ?) Ir.


Here may also belong
$y \bar{o}^{\prime} t l m e q$ plural hiniō'tlmeq, to command.
$\boldsymbol{\gamma}$. Introduction of consonants other than $\boldsymbol{\mu}$.

|  | plural | delde'l $\mathrm{c}_{\text {, }}$, alive. |
| :---: | :---: | :---: |
| makysk' | " | mesma'kysk'. |
| $\boldsymbol{k} \cdot \underline{C} g^{-1} t k^{\prime}$ | " | $k \cdot \kappa t \nmid \cdot \bar{e}^{\prime}+k^{\prime}$, difficult. |
| laqlè'lp's | ", | laqlsplè' $l^{\prime} p^{\prime} \mathrm{En}$, to roll. |

8. The reduplicated syllable amalgamates with the stem.

$a n e^{\prime} s t$ " anne'st branch ( ", "an'ane'st).
e. The vowel of the reduplicated syllable is lengthened and the accent is thrown back upon the first reduplicated syllable, while the vowel of the stem is meakened.

> lekes plural lin leskes, to wash the body.
> caky ", cêcicîky, to haul out.
> tlaky ", tlé'tliky, to bend.
> t'ôk: ", t'át' ${ }^{\prime}$ ' $l$ l, to scratch.
3. The plural is formed by diæresis, or lengthening of vowels.

$$
\begin{aligned}
& \pi n \bar{a}^{\prime} s \text { plural } a n \bar{a}^{\prime} \kappa s, \text { skin. gnveln' plural guī̀la', cloak. } \\
& !y y^{i} n i^{\prime} n c \quad " \text { gy } \bar{e}^{\prime} n a m \text {, to give. hala'it " hai'lait, ceremonial dance. } \\
& \text { kyîba' ", hyība', to wait. hanä'k. " hu'nak', woman. }
\end{aligned}
$$

4. The plural is formed by the prefix $k \cdot a$-. In this class are included many names of parts of the body, adjectives expressing states of the body, such as blind, deaf, and also poor, words of location, and miscellaneous words which cannot be classified.
a. Parts of the body.
t'rng'e'c plural $k \cdot a t ' E m g \cdot e^{\prime} c$, head. $\quad \pi n^{\prime} \hat{o}^{\prime} n$
 ts' ${ }^{\prime} m u^{\prime} k . \quad "$ - $k \cdot a t s^{\prime} E m u{ }^{\prime} k$ ', mouth. $t_{E} \cdot m \vec{k} \cdot \vec{a}^{\prime}{ }_{H}$ t'muthim
plural kaan'ô'n, hand.

b. Adjectives expressing states of the body.

| $k y i l a^{\prime}$ | plural | k-ikyiba', lame. |
| :---: | :---: | :---: |
| sins | " | kasi'us, blind. |
| ts'ilk. | , | $k \cdot a t$ Tic' $k$, deaf. |
| merri'tsq | " | kntmwintay, crazy ( $=$ similar to a land otter) |

Here may bolong also

| $i^{\prime}$ k | plıral |  |
| :---: | :---: | :---: |
| st |  |  |

e. Locations.
dinn plural krali'n, outside.
laq'o " kulaq'i', on top.
stô'ôkys ". k'astô'okky, side of.
d. Other words, unclassified.

|  | plural |  |
| :---: | :---: | :---: |
| $n \bar{u}$ 'd's $: 1$ | " |  |
| yicyu'xqyitlic | " | yixk.agu'sgyith'r, to rejoice. |
| lē'luko | ", | $\hat{k} \cdot a / \bar{e}$ 'luke, to steal. |
| ynîusilü'Ensgut | " | guîuk asilé'e:nsgut, hunter. |
| nist |  | k'ani'st, root. |
| $k \cdot i^{\prime} i t$ | " | $k \cdot a l \cdot a^{\prime} i t$, hat. |

B. Terms of relationship from the plural by the prefix $k \cdot a$ - and the suffix $-(t) k$

| niii' | plural | $k \cdot a m i a^{\prime} s: l{ }^{\prime}$, grandfa |
| :---: | :---: | :---: |
| ntes'ets | " | $k \cdot a n t s{ }^{\prime \prime}$ 'stsh', grandmother |
| nequai'ot | " | $k \cdot a n k g u i^{\prime} \hat{i} k$ ', fnther. |
| $n$ nimip | , | k-ans $\mathrm{lim}^{\prime} p k$, |
| nuky |  | k-anakyk' (?), younger brothe |

The following two have besides reduplication of the stem with lengthening of the reduplicated syllable:

$$
\begin{array}{lcl}
n a k y s & \text { plural } & k \cdot a n \bar{e}^{\prime} n \hat{i k y / k l i}, \text { wife } \\
n o \hat{q} & " & k \cdot a n \hat{a}^{\prime} n v q k^{\prime}, \text { mother. }
\end{array}
$$

I found the following two without the prefix k:

Irregular is
huodä'cky'sn plural tlu®diu'eli'suth', grandson.
Here belongs also
$m \bar{c}^{\prime} E n$ plural k $\cdot a m \bar{c}^{\prime} E n t k^{\prime}$, master.
6. The plural is formed by the prefix $l$ - with variable vowel. Words forming the plural in this manner have a tendency to form irregular plurals.

| a. akys; | plural | laa'kys, to drink. |
| :---: | :---: | :---: |
| yo.rk ${ }^{\text {c }}$ | " | ley |
| goiks ${ }^{6}$ | , | $l_{\text {rgö' }} / \mathrm{ksk}{ }^{\text {c }}$, to be awake. |
| d'alk | " | lr $d^{\prime} a^{\prime} \bar{l}^{\prime}$ ', to devour. |
| $q q^{\text {a }}$ ts'as | " | laqbē'ts' ${ }^{\prime}$ 'qt, afraid. |

b. sme words have the prefix $l$ - combined with reduplication.

Qdan plural luнdé'dî́, hunger.
0. Initial $g y$ and $k$ are elided when they follow the prefix 1 -
gyákyc plural lâkyo, a bird swims.
gyıbä'yuk ", libä'yuk, to fly.
k' $\bar{e}^{\prime} n E q$ " lé'n $\quad$ q, a tree falls.
to a land otter).
ejoice.
nter.
t-and the sufix --(t) er. ther
r brother.
em with leugthening of
wel. Words forming the als.
sation.

Here belong ulso the reduplicated plurals :-
gyamkys plurnl lsmla'mkys, to warm one's self. gya'mgyill " lamla'mgyill, to warm something.
d. Irregular but related to this class are

$$
\begin{aligned}
& \text { yaq plural li'lér, to hide. } \\
& y \hat{i} \eta!a^{\prime} \Omega^{\prime} \quad \text { " lisli's }{ }^{\prime} \text {, to hang (v. n.). } \\
& \text { alluk " liclua, to shoot. } \\
& \text { gyonë'tk' ", lenédemh'st, to arise. }
\end{aligned}
$$

7. Irregular plurals.
a. Singular and plural are derived from different stems.

| gy'ädk | plural | hi'ut, to escape. | da'utl pla | plural | sa'kysk', to go aw.y. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $y y^{\prime \prime}$ | ", | thin, to walk. <br>  | malk ${ }_{\text {maqkit }}$ |  | $t q i^{\prime} \backslash d n t$ to put into fire. |
| imk $k^{\prime} E^{\prime} n$ | ", | tqak's'n, to feed. | baq | " | dentk, to go aboaid. |
| d'a | " | ram, to sit. | mu'grat |  | $t^{\prime} u t l$, to put. |
| lvkxel' $a^{\prime}$ | " | leksma', island. | gyitl | " | litll, to lie down. |
| ${ }^{1}: a k$ | " | $y e t s$, to kill ( $\mathrm{pl} .=$ to chop). | ts'ćn | " | $l a^{\prime}$ mulziq, to euter. |
|  | " | mak'sk', to stand | nôk | " | daq, to die. |
|  | " | dspmia' $k: s k^{\prime}$, short. |  |  |  |
| mith' | " | balc, form. | qak |  | tltiơ'ugyît, male slave |
| $\mathrm{gi}^{\mathbf{i}}$ | " | dôk, to take. | wat'ak' | " | tltlé'ngyit, female slave. |
| $\begin{aligned} & d^{\prime} a^{\prime} \mid k^{+} \\ & (q \operatorname{tin}) \end{aligned}$ | " | (qtlna) sgyi'th, to kneel. |  |  |  |
|  |  |  |  |  |  |
|  |  | walk), to go out. | citlli |  | köpnwilhycitlh nobleman. |
| mak.t | " | wîlk ${ }^{\text {a }}$, to carry. |  |  | $\bar{c}^{\prime}$ 'uot, man. |
| *'ats'a'a | " | alisgyī ${ }^{\prime} d a$, ugly. |  |  | vud' ${ }^{\prime}$ 'q, larg |
|  |  |  | tsơsky | " | ske's' $'$ ', sinall. |

b. Singular and plural are formed from the same or related stems.

| muyít $k^{\text {c }}$ | plural | si'y $a^{\prime} t k^{\prime}$, to ery, to weep. |
| :---: | :---: | :---: |
| aiawa'tll | " | alayun $\vec{a}^{\prime} d_{k}$, to shout. |
| $n \cdot \bar{\sim} m e^{\prime} k$ | " | nwil'aq alsme'd'e, to shout. |
| lōma'kysa | " | liole'dikysa, to wash clothing. |
| nīnak' | " | $n n e^{\prime} n \mathrm{k} \mathrm{L}^{\prime}$, long. |
| n $\bar{i} d$ d'ô'Q | " | $d^{\prime} E Q d^{\prime} \hat{o}^{\prime} \mathrm{q}$, stout. |
| $k ' s t a k \cdot s$ | " | $l \mathrm{lnstgin}{ }^{\prime} d \mathrm{k} \cdot \mathrm{s}$, to leave. |
| q'aèma's | " | $q^{\prime} a \bar{a} m a^{\prime} k \cdot s t$, young. |
| an'ama's | " | am'ama'k'st, pretty. |

## Composition.

The composition of words in Tsimshian and Nisk'a is remarkab'y loose. Although there are a great number of formative elements which have no independent existence they do not combine very intimately with the words to which they are prefixed. I pointed out before that the reduplicated syllable remains separated fiom the stem br a hiatus or pause. The same is true of all compositions, as the following examples will show :-

> hagun'iḗr, to walk towards. ts'sm'a'lyys, in water.
> $\mathrm{lsg}^{\mathrm{s} \cdot \mathrm{sm}} \mathrm{o}_{\mathrm{H}}$, to throw into (from top).

This loose connection is also shown by the fact that in compounds the plural is formed from the stem alone.
 $k \cdot a l h v i i^{\prime}!p \quad, \quad k \quad$ alhun $\dot{c}^{\prime} l p$, house.
daqgya't ". daqgyigya't, strong.
There are very few cases of contractions.
Sîyidemna'k, chieftainess; plural, síyidamha'nak. The end of this word was undoubtedly originally hanak; woman.


